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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,603	08/28/2001	Shunichi Ishikawa	019519-320	3289

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 09/30/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/939,603

Applicant(s)

ISHIKAWA ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' filing of certified copy of the foreign priority document on 7/1/03 is acknowledged.

The following action is non-final in light of the use of a new reference against the present claims, namely, Noro et al. (U.S. 2002/0046680).

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1 and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols et al. (U.S. 6,184,268) in view of either Evans et al. (U.S. 6,136,079) or Helber et al. (U.S. 6,093,510).

The rejection is adequately set forth in paragraph 4 of the office action mailed 4/1/03, Paper No. 3, and is incorporated here by reference.

With respect to the newly added claim limitation that the dye changes λ_{\max} in 20 to 150 nm between molecular dispersion state and the J-aggregated state, given that Evans et al. or Helber et al. disclose dye identical to that presently claimed, it is clear that the dye will inherently exhibit change in λ_{\max} as presently claimed.

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4. Claims 2-3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols et al. (U.S. 6,184,268) in view of Idei et al. (U.S. 5,302,437) and either Evans et al. (U.S. 6,136,079) or Helber et al. (U.S. 6,093,510).

The rejection is adequately set forth in paragraph 5 of the office action mailed 4/1/03, Paper No. 3, and is incorporated here by reference.

With respect to the newly added claim limitation that the dye changes λ_{\max} in 20 to 150 nm between molecular dispersion state and the J-aggregated state, given that Evans et al. or Helber et al. disclose dye identical to that presently claimed, it is clear that the dye will inherently exhibit change in λ_{\max} as presently claimed.

5. Claims 1, 5, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helling et al. (U.S. 6,313,196) in view of either Evans et al. (U.S. 6,136,079) or Helber et al. (U.S. 6,093,510).

The rejection is adequately set forth in paragraph 6 of the office action mailed 4/1/03, Paper No. 3, and is incorporated here by reference.

With respect to the newly added claim limitation that the dye changes λ_{\max} in 20 to 150 nm between molecular dispersion state and the J-aggregated state, given that Evans et al. or Helber et al. disclose dye identical to that presently claimed, it is clear that the dye will inherently exhibit change in λ_{\max} as presently claimed.

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6. Claims 2-3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helling et al. (U.S. 6,313,196) in view of Idei et al. (U.S. 5,302,437) and either Evans et al. (U.S. 6,136,079) or Helber et al. (U.S. 6,093,510).

The rejection is adequately set forth in paragraph 7 of the office action mailed 4/1/03, Paper No. 3, and is incorporated here by reference.

With respect to the newly added claim limitation that the dye changes λ_{\max} in 20 to 150 nm between molecular dispersion state and the J-aggregated state, given that Evans et al. or Helber et al. disclose dye identical to that presently claimed, it is clear that the dye will inherently exhibit change in λ_{\max} as presently claimed.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols et al. (U.S. 6,184,268) or Helling et al. (U.S. 6,313,196) either of which in view of Hasegawa et al. (U.S. 4,832,984) and either Evans et al. (U.S. 6,136,079) or Helber et al. (U.S. 6,093,510).

The rejection is adequately set forth in paragraph 8 of the office action mailed 4/1/03, Paper No. 3, and is incorporated here by reference.

With respect to the newly added claim limitation that the dye changes λ_{\max} in 20 to 150 nm between molecular dispersion state and the J-aggregated state, given that Evans et al. or Helber et al. disclose dye identical to that presently claimed, it is clear that the dye will inherently exhibit change in λ_{\max} as presently claimed.

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8. Claims 1 and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols et al. (U.S. 6,184,268) in view of Noro et al. (U.S. 2002/0046680).

Nichols et al. disclose ink jet ink comprising 1-20% dye that has particle size of 0.001-2 μm and 0.1-5% latex that has average particle size of 0.05-0.5 μm . The latex is obtained from monomers including acrylic acid. The ink has surface tension of 40-100 dynes/cm, viscosity less than 10 cP, and pH of approximately 5-7. There is also disclosed a method wherein the ink is printed onto coated paper (col.6, lines 2-20, col.7, lines 27-30, col.11, lines 51-58 and 60, col.12, lines 50-58, col.14, lines 47-64, col.15, lines 3-14, and Table in col.19).

The difference between Nichols et al. and the present claimed invention is the requirement in the claims of specific type of dye.

Noro et al., which is drawn to ink jet ink, disclose dye J-aggregate identical to those presently claimed wherein the dye changes λ_{max} in 20 to 150 nm between a molecular dispersion state and J-aggregated state. The motivation for using such dyes is to improve the lightfastness of the ink (paragraphs 26-28, 72, 131, and table on page 10).

In light of the motivation for using dye J-aggregate disclosed by Noro et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye in the ink of Nichols et al. in order to produce ink with improved lightfastness, and thereby arrive at the claimed invention.

9. Claims 2-3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols et al. (U.S. 6,184,268) in view of Idei et al. (U.S. 5,302,437) and Noro et al. (U.S. 2002/0046680).

Nichols et al. disclose ink jet ink comprising 1-20% dye that has particle size of 0.001-2 μm and 0.1-5% latex that has average particle size of 0.05-0.5 μm . The ink has surface tension of 40-100 dynes/cm, viscosity less than 10 cP, and pH of approximately 5-7. There is also discloses a method wherein the ink is printed onto coated paper (col.6, lines 2-20, col.7, lines 27-30, col.11, lines 51-58 and 60, col.12, lines 50-58, col.14, lines 47-64, col.15, lines 3-14, and Table in col.19).

The difference between Nichols et al. and the present claimed invention is the requirement in the claims of (a) specific type of dye and (b) specific type of image receiving material.

With respect to difference (a), Noro et al., which is drawn to ink jet ink, disclose dye J-aggregate identical to those presently claimed wherein the dye changes λ_{max} in 20 to 150 nm between a molecular dispersion state and J-aggregated state. The motivation for using such dyes is to improve the lightfastness of the ink (paragraphs 26-28, 72, 131, and table on page 10).

With respect to difference (b), Nichols et al. disclose printing the ink on coated paper, however, there is no disclosure that the paper comprises image receiving layer comprising inorganic white pigment as presently claimed.

Idei et al., which is drawn to ink jet recording sheet, disclose that when the ink jet recording is carried out on non-coated, i.e. plain, paper, the images are low in colorfulness,

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clarity, printed dot density, and image density resulting in a deterioration of dot shape, feathering, and strike-through. Idei et al. also disclose that when ink jet recording is carried out on a coated paper, the colorfulness, clarity, feathering, and strike-through are improved as compared to recording on non-coated paper. The coated paper includes paper having a silica coating (col.3, lines 15-42 and 57-66 and col.4, lines 54-57).

In light of the motivation for using dye J-aggregate disclosed by Noro et al. as described above and for using paper coated with image receiving layer disclosed by Idei et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye and paper in Nichols et al. in order to produce ink with improved lightfastness, and to produce printed images with improved colorfulness, clarity, feathering, and strike-through and thereby arrive at the claimed invention.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols et al. (U.S. 6,184,268) in view of Hasegawa et al. (U.S. 4,832,984) and Noro et al. (U.S. 2002/0046680).

Nichols et al. disclose ink jet ink comprising 1-20% dye that has particle size of 0.001-2 μm and 0.1-5% latex that has average particle size of 0.05-0.5 μm . The ink has surface tension of 40-100 dynes/cm, viscosity less than 10 cP, and pH of approximately 5-7. There is also disclosed a method wherein the ink is printed onto coated paper (col.6, lines 2-20, col.7, lines 27-30, col.11, lines 51-58 and 60, col.12, lines 50-58, col.14, lines 47-64, col.15, lines 3-14, and Table in col.19).

The difference between Nichols et al. and the present claimed invention is the requirement in the claims of (a) specific type of dye and (b) specific type of image receiving material.

With respect to difference (a), Noro et al., which is drawn to ink jet ink, disclose dye J-aggregate identical to those presently claimed wherein the dye changes λ_{\max} in 20 to 150 nm between a molecular dispersion state and J-aggregated state. The motivation for using such dyes is to improve the lightfastness of the ink (paragraphs 26-28, 72, 131, and table on page 10).

With respect to difference (b), Hasegawa et al., which is drawn to ink jet recording medium, disclose the use of substrate coated with lower image receiving layer comprising pigment such as silica and upper layer comprising water-dispersible polymer such as acrylic resin wherein the ink passes through the upper layer to reach the image receiving layer. The motivation for using such recording medium is to obtain image that has excellent water resistance and light resistance (col.3, lines 9-18 and 21-27, col.4, lines 41-43, col.5, lines 8 and 23, and col.9, lines 17-21).

In light of the motivation for using dye J-aggregate disclosed by Noro et al. as described above and for using coated paper disclosed by Hasegawa et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such dye and paper in either Nichols et al. in order to produce ink with improved lightfastness, and to produce printed images with good water resistance and anti-blocking properties, and thereby arrive at the claimed invention.

Response to Arguments

11. Applicants' arguments filed 7/1/03 have been fully considered but they are not persuasive.

Specifically, applicants argue that:

(a) There is no disclosure in Evans et al. that the dye is a J-aggregate or that the dye changes λ_{\max} in 20 to 150 nm between molecular dispersion state and the J-aggregated state.

(b) No disclosure in Helber et al. that the dye changes λ_{\max} in 20 to 150 nm between molecular dispersion state and the J-aggregated state.

(c) No motivation to combine Nichols et al. or Helling et al. with Helber et al.

With respect to difference (a), it is agreed that there is no disclosure in Evans et al. that the dye is a J-aggregate or of the change in λ_{\max} as presently claimed. However, it is the examiner's position that given that Evans et al. disclose dye which is identical in structure to the presently claimed, it is clear that the dye would inherently function as J-aggregate and inherently change λ_{\max} in 20 to 150 nm between a molecular dispersion state and J-aggregated state.

Applicants argue that the examiner bears the burden of establishing that the dye in Evans et al. inherently possesses claimed feature of that the dye changes λ_{\max} in 20 to 150 nm between a molecular dispersion state and J-aggregated state. However, it is the examiner's position that this burden has been established given that Evans et al. discloses dye identical in structure as dye presently claimed. Given this fact, the dye must inherently possess same features as the dye presently claimed including change in λ_{\max} .

With respect to argument (b), it is agreed that there is no disclosure in Helber et al. that the dye changes λ_{\max} in 20 to 150 nm between a molecular dispersion state and J-aggregated state. Applicants argue that the examiner bears the burden of establishing that the dye in Helber et al. inherently possesses claimed feature of that the dye changes λ_{\max} in 20 to 150 nm between a molecular dispersion state and J-aggregated state. However, as set forth in response to argument (a) above, it is the examiner's position that this burden has been established given that Helber et al. discloses dye identical in structure as dye presently claimed. Given this fact, the dye must inherently possess same features as the dye presently claimed including change in λ_{\max} .


With respect to argument (c), while it is agreed that Helber et al. disclose that the dyes are particularly useful in photographic finger-filter applications, attention is drawn to col. 16, lines 62-63 of Helber et al. which disclose that the dyes are also suitable for use in non-photographic imaging applications such as ink jet systems. Thus, it is the examiner's position that there is motivation to combine Nichols et al. or Helling et al. with Helber et al.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
9/16/03